

Working Document to the  
Arctic Fisheries Working Group  
23 August – 1 September 1999

# **INVESTIGATIONS ON DEMERSAL FISH IN THE BARENTS SEA WINTER 1999**

## **Main results**

by

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NORWAY

Table 1. COD. Abundance indices from acoustic surveys in the Barents Sea winter 1981-1999 (numbers in millions). 1981-1992 includes mainly areas A, B C and D.

Year	Age										Total
	1	2	3	4	5	6	7	8	9	10+	
1981	8	82	40	63	106	103	16	3	1	1	423
1982	4	5	49	43	40	26	28	2	+	0	197
1983	0	19	13	23	27	14	7	4	1	+	108
1984	1807	150	31	11	7	5	2	+	+	0	2013
1985	108	768	179	127	21	9	6	+	+	+	1218
1986	1302	590	595	124	56	7	2	+	+	0	2676
1987	3	72	96	256	46	12	1	1	+	0	487
1988	2	29	64	42	75	9	2	+	+	0	224
1989	9	9	20	43	27	57	8	1	+	0	174
1990	350	45	16	24	27	22	40	3	1	0	526
1991	187	234	55	31	27	25	14	16	1	0	591
1992	348	579	182	48	18	11	8	4	2	0	1201
1993	1686	432	300	163	80	14	7	3	1	3	2688
1994	1083	686	358	343	159	43	9	2	1	1	2685
1995	2644	280	181	161	214	69	18	2	1	1	3570
1996	2404	335	96	70	86	75	21	3	+	+	3090
1997 <sup>1</sup>	1633	504	196	53	49	37	22	4	1	+	2500
1998 <sup>1</sup>	3414	631	436	182	42	33	27	14	2	1	4781
1999	360	303	150	97	45	11	6	4	1	+	977

<sup>1)</sup> Indices raised to also represent the Russian EEZ.

Table 2. COD. Abundance indices from bottom trawl surveys in the Barents Sea winter 1981-1999 (numbers in millions). 1981-1992 includes only main areas A, B, C and D).

Year	Age										Total
	1	2	3	4	5	6	7	8	9	10+	
1981	4.6	34.3	16.4	23.3	40.0	38.4	4.8	1.0	0.3	0.0	163.1
1982	0.8	2.9	28.3	27.7	23.6	15.5	16.0	1.4	0.2	0.0	116.5
1983	341.9	19.0	22.3	37.1	33.3	13.5	4.6	3.0	0.6	0.2	474.4
1984	2864.4	393.2	115.9	26.2	18.9	10.6	3.2	0.5	0.2	0.1	3433.1
1985	51.5	727.6	144.4	99.5	15.7	6.4	2.5	0.2	0.1	0.1	1047.8
1986	741.8	461.5	657.1	137.1	75.0	23.3	5.5	0.6	0.2	0.1	2102.2
1987	33.4	457.4	233.4	365.5	46.1	11.3	1.4	0.4	+	0.0	1148.9
1988	5.0	72.9	185.2	95.3	189.5	19.1	3.6	0.6	0.1	0.0	571.3
1989	9.4	13.6	36.5	64.9	35.2	77.9	8.7	0.8	0.2	0.2	247.4
1990	161.0	50.8	23.3	30.1	33.6	19.7	23.9	1.3	0.4	0.1	344.1
1991	470.8	224.7	32.3	19.1	17.5	16.1	9.3	9.7	0.5	0.1	800.1
1992	131.6	528.9	149.6	49.5	18.4	11.8	7.5	4.0	2.7	0.2	904.3
1993	534.1	331.0	311.8	152.6	69.0	14.2	6.9	4.2	2.2	2.1	1430.2
1994	861.8	496.8	276.3	297.6	145.9	46.9	8.8	2.3	1.2	1.2	2138.8
1995	4892.4	503.8	288.2	231.2	249.2	70.4	18.0	2.2	0.7	1.0	6256.8
1996	5778.8	715.5	177.6	116.0	136.9	107.5	24.5	2.9	0.4	0.5	7060.5
1997 <sup>1</sup>	5003.1	1158.0	267.8	63.2	70.3	52.4	28.6	5.9	1.0	0.4	6650.8
1998 <sup>1</sup>	2591.0	763.9	450.3	172.0	36.4	26.0	18.0	8.7	1.1	0.3	4067.7
1999	483.9	339.7	211.6	172.8	58.0	13.4	6.4	5.0	1.1	0.5	1292.4

<sup>1)</sup> Indices raised to also represent the Russian EEZ.

Table 3. Total mortality observed for cod during the winter survey in the Barents Sea in 1993-99.

Year	Age							
	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9
	Acoustic investigations							
1993-94	0.90	0.19	-0.13	0.02	0.62	0.44	1.25	1.10
1994-95	1.35	1.33	0.80	0.47	0.83	0.87	1.50	0.69
1995-96	2.07	1.07	0.95	0.63	1.05	1.19	1.79	0.69
1996-97	1.56	0.54	0.60	0.35	0.83	1.21	1.59	1.31
1997-98	0.95	0.14	0.08	0.23	0.40	0.32	0.49	0.90
1998-99	2.42	1.44	1.51	1.39	1.34	1.71	1.91	2.62
	Bottomtrawl investigations							
1993-94	0.07	0.18	0.05	0.04	0.39	0.48	1.10	1.25
1994-95	0.54	0.54	0.18	0.18	0.73	0.96	1.39	1.19
1995-96	1.92	1.04	0.91	0.52	0.84	1.06	1.83	1.70
1996-97	1.61	0.98	1.03	0.50	0.96	1.32	1.43	1.02
1997-98	1.88	0.94	0.44	0.55	1.00	1.07	1.19	1.72
1998-99	2.09	1.24	1.15	1.00	0.93	1.39	1.83	2.52

Table 4. COD. Length (cm) at age in the Barents Sea from the investigations winter 1978 - 1999.

Year	Age							
	1	2	3	4	5	6	7	8
1978	14.2	23.1	32.1	45.9	54.2	64.6	67.6	76.9
1979	12.8	22.9	33.1	40.0	52.3	64.4	74.7	83.0
1980	17.6	24.8	34.2	40.5	52.5	63.5	73.6	83.6
1981	17.0	26.1	35.5	44.7	52.0	61.3	69.6	77.9
1982	14.8	25.8	37.6	46.3	54.7	63.1	70.8	82.9
1983	-	26.1	34.8	46.8	56.0	64.5	73.3	80.4
1984	13.8	26.2	35.8	49.2	57.9	67.4	79.6	82.2
1985	14.5	23.5	40.3	50.8	62.2	71.1	81.8	88.7
1986	13.3	22.6	34.4	50.4	60.0	70.2	82.3	95.2
1987	14.5	21.0	31.8	41.1	55.7	67.2	81.8	94.5
1988	14.7	22.5	29.7	37.0	46.4	58.0	70.1	81.1
1989	12.7	25.7	34.7	40.6	47.5	57.1	68.5	84.0
1990	14.3	29.0	39.4	47.4	53.9	60.9	70.9	87.5
1991	13.8	27.6	41.6	52.6	60.2	68.2	73.8	79.0
1992	13.4	24.7	41.3	50.7	59.9	69.2	77.0	82.7
1993	11.4	20.7	35.9	50.9	59.2	68.8	76.2	84.5
1994	12.0	18.5	30.5	44.8	55.0	64.6	73.5	84.0
1995	12.7	18.8	29.9	42.5	54.2	63.9	76.0	82.0
1996	12.6	19.6	28.1	40.9	49.3	61.4	72.3	85.3
1997 <sup>1</sup>	11.4	18.8	28.0	40.4	49.9	59.3	69.1	80.6
1998 <sup>1</sup>	10.9	17.4	28.7	40.0	50.5	58.9	67.5	76.3
1999	12.1	18.8	29.0	40.6	50.6	59.9	70.3	78.0

<sup>1)</sup> Adjusted lengths

Table 5. COD. Weight (g) at age in the Barents Sea from the investigations winter 1985 - 1999.

Year	Age							
	1	2	3	4	5	6	7	8
1985	-	-	670	1070	2230	3650	4920	5060
1986	-	-	390	1090	1850	3110	4320	5509
1987	21	65	230	490	1380	2300	3970	-
1988	20	80	203	410	793	1473	2706	4613
1989	10	150	380	590	930	1570	2640	4940
1990	28	229	570	1030	1460	1930	2890	4370
1991	20	190	720	1370	2040	2850	3660	4630
1992	20	130	640	1120	1850	2830	3980	4990
1993	11	76	430	1196	1766	2779	3894	5519
1994	12	59	261	797	1452	2273	3369	5062
1995	16	56	250	675	1347	2192	3606	4974
1996	15	61	206	633	1059	1995	3352	5512
1997 <sup>1</sup>	12	54	213	606	1112	1790	2851	4761
1998 <sup>1</sup>	10	47	231	579	1145	1732	2589	3930
1999	13	55	219	604	1161	1865	2981	3991

<sup>1)</sup> Adjusted weights

Table 6. COD. Yearly weightincrement (g) from the investigations in the Barents Sea winter 1985-1999.

Year	Age						
	1-2	2-3	3-4	4-5	5-6	6-7	7-8
1985-86	92	280	420	780	880	670	589
1986-87	48	120	100	290	450	860	741
1987-88	59	138	180	303	93	406	643
1988-89	130	300	387	520	777	1167	2234
1989-90	219	420	650	870	1000	1320	1730
1990-91	162	491	800	1010	1390	1730	1740
1991-92	110	450	400	480	790	1130	1330
1992-93	56	300	556	646	929	1064	1539
1993-94	48	185	367	256	507	590	1168
1994-95	44	191	414	550	740	1333	1605
1995-96	45	150	383	384	648	1160	1906
1996-97	39	152	400	479	731	856	1409
1997-98	35	177	366	539	620	799	1079
1998-99	48	172	373	582	720	1249	1402

Table 7. HADDOCK. Abundance indices from acoustic surveys in the Barents Sea winter 1981-1999 (numbers in millions). 1981-1992 includes mainly areas A, B, C and D.

Year	Age										Total
	1	2	3	4	5	6	7	8	9	10+	
1981	7	14	5	21	60	18	1	+	+	+	125
1982	9	2	3	4	4	10	6	+	+	+	38
1983	0	5	2	3	1	1	4	2	+	+	18
1984	1685	173	6	2	1	+	+	+	+	+	1866
1985	1809	839	274	6	+	+	+	1	+	+	2928
1986	680	312	488	162	+	+	+	+	+	+	1644
1987	111	26	71	190	47	+	+	+	0	+	446
1988	20	5	8	20	38	6	+	+	0	+	97
1989	58	6	8	10	17	19	2	+	0	+	119
1990	493	44	4	3	4	7	11	1	+	+	568
1991	1938	265	49	7	2	2	2	4	+	0	2269
1992	859	685	110	19	2	+	+	1	2	+	1714
1993	1424	690	565	99	10	+	+	1	+	2	2790
1994	848	228	240	506	77	8	+	+	+	+	1908
1995	1380	285	36	113	391	40	2	+	+	1	2247
1996	249	229	44	31	76	150	8	1	0	+	788
1997 <sup>1</sup>	798	32	66	22	15	48	47	3	+	+	1031
1998 <sup>1</sup>	256	156	29	41	15	6	13	18	1	+	535
1999	856	46	57	13	14	4	1	2	2	+	994

<sup>1)</sup> Indices raised to also represent the Russian EEZ.

Table 8. HADDOCK. Abundance indices from bottom trawl surveys in the Barents Sea winter 1981-1999 (numbers in millions). 1981-1992 includes only main areas A, B, C and D.

Year	Age								Total
	1	2	3	4	5	6	7	8+	
1981	3.1	7.3	2.3	7.8	1.8	5.3	0.5	0.2	28.3
1982	3.9	1.5	1.7	1.8	1.9	4.8	2.4	0.2	18.2
1983	2776.8	6.6	2.7	2.7	1.3	1.3	2.8	1.3	2795.3
1984	5382.0	683.4	14.9	1.6	0.7	0.2	0.3	0.3	6083.3
1985	1421.2	1362.2	384.8	6.3	0.4	0.2	0.3	0.3	3175.5
1986	649.0	360.2	339.8	126.8	4.5	0.5	0.1	0.1	1480.9
1987	134.3	95.2	174.1	272.3	50.6	0.1	2.0	0.0	728.5
1988	44.6	16.1	28.8	67.4	110.7	15.7	0.2	0.0	283.6
1989	80.8	7.0	9.0	15.4	26.9	27.4	2.9	0.0	169.5
1990	555.4	51.4	4.1	3.4	5.2	9.4	12.1	1.7	642.8
1991	1526.0	420.9	72.4	12.6	3.1	2.4	3.0	5.6	2046.0
1992	1282.2	1191.2	283.5	59.9	4.1	0.9	1.3	5.1	2828.3
1993	717.5	585.1	467.8	105.6	10.3	0.5	0.5	2.2	1889.5
1994	587.5	200.3	296.0	448.2	50.8	3.2	0.2	1.1	1587.3
1995	1271.8	182.0	42.6	153.4	341.6	31.3	2.0	0.5	2025.3
1996	312.7	265.9	53.2	48.9	149.4	255.9	11.6	1.0	1098.5
1997 <sup>1</sup>	1218.7	69.0	83.9	27.7	19.6	45.7	63.3	3.8	1531.8
1998 <sup>1</sup>	197.2	142.6	21.8	32.4	13.7	3.2	8.3	9.0	428.3
1999	1244.9	57.6	59.8	12.2	10.2	2.8	1.0	2.8	1391.3

<sup>1)</sup> Indices raised to also represent the Russian EEZ.

Table 9. Total mortality observed for haddock during the winter survey in the Barents Sea for the period 1993-99.

Year	Age						
	1-2	2-3	3-4	4-5	5-6	6-7	7-8
	Acoustic investigations						
1993-94	1.83	1.06	0.11	0.25	0.22	-	-
1994-95	1.09	1.85	0.75	0.26	0.65	1.39	-
1995-96	1.80	1.87	0.15	0.40	0.96	1.61	0.69
1996-97	2.05	1.24	0.69	0.75	0.46	1.16	1.05
1997-98	1.63	0.10	0.48	0.37	0.92	1.33	0.96
1998-99	1.73	1.00	0.79	1.08	1.44	1.43	1.90
	Bottomtrawl investigations						
1993-94	1.28	0.68	0.04	0.73	1.17	0.92	-0.79
1994-95	1.17	1.55	0.66	0.27	0.48	0.47	-0.92
1995-96	1.57	1.23	-0.14	0.03	0.29	0.99	0.69
1996-97	1.51	1.15	0.65	0.91	1.18	1.40	1.12
1997-98	2.15	1.15	0.95	0.71	1.80	1.70	1.95
1998-99	1.23	0.87	0.58	1.16	1.59	1.17	1.59

Table 10. HADDOCK. Length (cm) at age in the Barents Sea from the investigations winter 1987 – 1999

Year	Age						
	1	2	3	4	5	6	7
1987	13.9	21.6	30.2	39.2	47.0	62.5	-
1988	13.5	24.3	29.3	36.2	42.7	50.1	56.6
1989	16.3	22.5	32.0	36.8	43.0	47.3	53.6
1990	16.3	24.9	33.8	44.2	46.9	50.7	53.0
1991	16.9	25.0	37.0	42.7	54.3	55.2	53.8
1992	15.6	25.4	36.5	45.9	53.9	61.6	62.9
1993	14.4	21.8	32.2	42.6	50.6	58.4	57.9
1994	14.8	21.5	29.7	38.7	47.4	54.2	57.4
1995	15.4	19.9	27.9	34.0	42.6	51.3	55.9
1996	15.4	21.6	28.6	38.0	42.1	46.8	55.3
1997 <sup>1</sup>	16.1	21.1	27.7	35.4	39.7	47.5	50.1
1998 <sup>1</sup>	14.4	22.9	29.2	35.8	41.3	48.4	50.9
1999	14.7	20.8	32.3	39.4	45.5	52.3	54.6

<sup>1)</sup> Adjusted lengths

Table 11. HADDOCK. Weight (g) at age in the Barents Sea from the investigations winter 1987 - 1999.

Year	Age						
	1	2	3	4	5	6	7
1987	24	91	273	542	934	2197	-
1988	25	120	350	450	730	1140	1560
1989	40	100	320	490	780	1040	1440
1990	42	148	370	827	988	1247	1425
1991	40	140	490	840	1630	1710	1600
1992	30	150	450	940	1510	2280	2510
1993	27	98	329	788	1331	2030	2324
1994	25	91	251	555	1026	1578	1813
1995	30	71	207	374	750	1278	1650
1996	30	92	224	557	745	1017	1783
1997 <sup>1</sup>	35	88	200	429	625	1063	1286
1998 <sup>1</sup>	25	112	241	470	746	1169	1341
1999	27	85	333	614	947	1494	1616

<sup>1)</sup> Adjusted weights

Table 12. HADDOCK. Yearly weight increment (g) from the investigations in the Barents Sea winter 1987 - 1999.

Year	Age					
	1-2	2-3	3-4	4-5	5-6	6-7
1987-88	96	259	177	188	206	-
1988-89	75	200	140	330	310	300
1989-90	108	270	507	498	467	385
1990-91	98	342	470	803	722	353
1991-92	110	310	450	670	650	800
1992-93	68	179	338	391	520	44
1993-94	64	153	226	238	247	-
1994-95	46	116	123	195	252	72
1995-96	62	153	350	371	267	505
1996-97	58	108	205	68	318	269
1997-98	77	153	270	317	544	278
1998-99	60	221	373	477	748	447

Table 13. SEBASTES MARINUS. Abundance indices from acoustic surveys in the Barents Sea winter 1986-1999 (numbers in millions). 1986-1992 includes only the area covered in 1986.

Year	Length group (cm)								Total
	10-14	15-19	20-24	25-29	30-34	35-39	40-44	>45	
1986	4	7	7	8	5	1	+	6	38
1987	6	17	13	8	3	3	2	3	55
1988	1	1	5	4	2	1	1	+	15
1989	4	3	7	9	6	4	2	1	36
1990	2	2	6	9	9	6	5	4	43
1991	21	10	15	20	21	14	7	7	115
1992	2	4	9	11	13	11	5	3	58
1993	3	6	9	11	24	18	8	7	86
1994	5	11	5	5	7	5	2	1	41
1995	5	11	15	13	14	16	10	6	90
1996	1	4	9	13	15	22	10	4	77
1997 <sup>1</sup>	0	2	9	10	12	12	6	3	55
1998 <sup>1</sup>	8	3	9	11	11	9	6	4	61
1999	1	+	2	4	6	4	2	1	20

<sup>1)</sup> Indices raised to also represent the Russian EEZ.

Table 14. SEBASTES MARINUS. Abundance indices from bottom trawl surveys in the Barents Sea winter 1986-1999 (numbers in millions). 1986-1992 includes only main areas A, B, C and D.

Year	Length group (cm)									Total
	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	> 45	
1986	3.0	11.7	26.4	34.3	17.7	21.0	12.8	4.4	2.6	134
1987	7.7	12.7	32.8	7.7	6.4	3.4	3.8	3.8	4.2	83
1988	1.0	5.6	5.5	14.2	12.6	7.3	5.2	4.1	3.7	59
1989	48.7	4.9	4.3	11.8	15.9	12.2	6.6	4.8	3.0	114
1990	9.2	5.3	6.5	9.4	15.5	14.0	8.0	4.0	3.4	75
1991	4.2	13.6	8.4	19.4	18.0	16.1	14.8	6.0	4.0	105
1992	1.8	3.9	7.7	20.6	19.7	13.7	10.5	6.6	5.8	92
1993	0.1	1.2	3.5	6.9	10.3	14.5	12.5	8.6	6.3	64
1994	0.7	6.5	9.3	11.7	11.5	19.4	9.1	4.4	2.8	75
1995	0.6	5.0	13.1	11.5	9.1	15.9	17.2	10.9	4.7	88
1996	+	0.7	3.5	6.4	9.4	11.7	16.6	7.9	3.9	60
1997 <sup>1</sup>	-	0.5	1.5	3.2	6.6	21.4	28.0	8.4	3.3	73
1998 <sup>1</sup>	0.2	6.0	2.5	10.5	49.5	25.2	13.1	6.9	2.3	116
1999	0.2	0.9	2.1	4.0	4.6	6.4	6.0	5.3	3.3	33

<sup>1)</sup> Indices raised to also represent the Russian EEZ.



Table 15. *SEBASTES MENTELLA*.<sup>1</sup> Abundance indices from acoustic surveys in the Barents Sea winter 1988-1999 (numbers in millions.) 1986-1992 includes only the area covered in 1986.

Year	Length group (cm)								Total
	10-14	15-19	20-24	25-29	30-34	35-39	40-44	>45	
1986	83	54	11	22	19	9	2	1	201
1987	17	178	86	34	10	3	1	+	329
1988	13	46	75	15	13	8	1	+	171
1989	35	12	89	36	6	10	2	+	190
1990	77	12	33	73	23	40	3	1	262
1991	549	88	31	75	38	33	3	+	817
1992	386	207	24	23	23	8	1	+	672
1993	1560	599	188	48	47	18	4	+	2464
1994	687	299	111	18	13	4	1	+	1133
1995	80	565	414	108	78	34	3	1	1283
1996	147	183	283	128	44	15	4	+	723
1997 <sup>2</sup>	165	41	229	165	44	25	2	0	670
1998 <sup>2</sup>	133	79	98	213	68	50	5	1	646
1999	4	35	18	44	19	7	1	+	130

<sup>1)</sup> Includes unidentified *Sebastes* specimens, mostly less than 15 cm.

<sup>2)</sup> Indices raised to also represent the Russian EEZ.

Table 16. *SEBASTES MENTELLA*.<sup>1</sup> Abundance indices from bottom trawl surveys in the Barents Sea winter 1986-1999 (numbers in millions). 1986-1992 includes only main areas A, B, C and D.

Year	Length group (cm)									Total
	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	> 45	
1986	81.3	151.9	205.4	87.7	169.2	129.8	87.5	23.6	13.8	951
1987	71.8	25.1	227.4	56.1	34.6	11.4	5.3	1.1	0.1	433
1988	587.0	25.2	132.6	182.1	39.6	50.1	47.9	3.6	0.1	1070
1989	622.9	55.0	28.4	177.1	58.0	9.4	8.0	1.9	0.3	962
1990	323.6	304.5	36.4	55.9	80.2	12.9	12.5	1.5	0.2	830
1991	395.2	448.8	86.2	38.9	95.6	34.8	24.3	2.5	0.2	1123
1992	139.0	366.5	227.1	34.6	55.2	34.4	7.5	1.8	0.5	867
1993	30.8	592.7	320.2	116.3	24.2	25.0	6.3	1.0	+	1117
1994	6.9	258.6	289.4	284.3	51.4	69.8	19.9	1.4	0.1	979
1995	263.7	71.4	637.8	505.8	90.8	68.8	31.3	3.9	0.5	1674
1996	213.1	100.2	191.2	337.6	134.3	41.9	16.6	1.4	0.3	1037
1997 <sup>2</sup>	63.2	120.9	24.8	278.2	271.8	70.9	39.8	5.2	0.1	875
1998 <sup>2</sup>	1.3	88.2	62.5	101.0	203.2	40.4	12.9	1.1	0.2	511
1999	2.2	6.8	68.2	36.8	167.4	71.3	21.0	3.1	0.1	377

<sup>1)</sup> Includes unidentified *Sebastes* specimens, mostly less than 15 cm.

<sup>2)</sup> Indices raised to also represent the Russian EEZ.

Table 17. GREENLAND HALIBUT. Abundance indices from the bottom trawl surveys in the Barents Sea winter 1990-1999 (numbers in thousands). 1990-1992 includes only main areas A, B, C and D. Indices for 1997 and 1998 are raised to also represent the Russian EEZ.

Year	Length group (cm)															Total
	<14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	> 80	
1990	21	199	777	785	1205	1657	1829	2043	1349	479	159	160	40	40	0	10800
1991	0	42	262	618	655	868	954	1320	1875	1577	847	165	34	34	0	9270
1992	14	35	64	149	509	843	1096	1072	1029	827	633	108	31	31	26	6500
1993	0	0	17	67	265	959	2310	4004	3374	1911	1247	482	139	139	34	14840
1994	0	0	16	99	142	1191	2625	3866	2885	1796	753	440	25	25	0	13838
1995	42	0	0	0	83	149	3228	9240	7438	2811	2336	909	468	468	0	26761
1996	3149	0	0	0	61	124	1163	3969	4425	1824	1041	593	346	73	12	16781
1997	0	65	0	0	173	227	858	4344	5500	2725	1545	632	282	66	22	16439
1998	80	217	1006	444	532	403	1064	3888	6331	2977	1725	633	337	76	43	19765
1999	41	82	261	427	576	264	757	1706	3069	1640	1077	483	109	74	28	10594

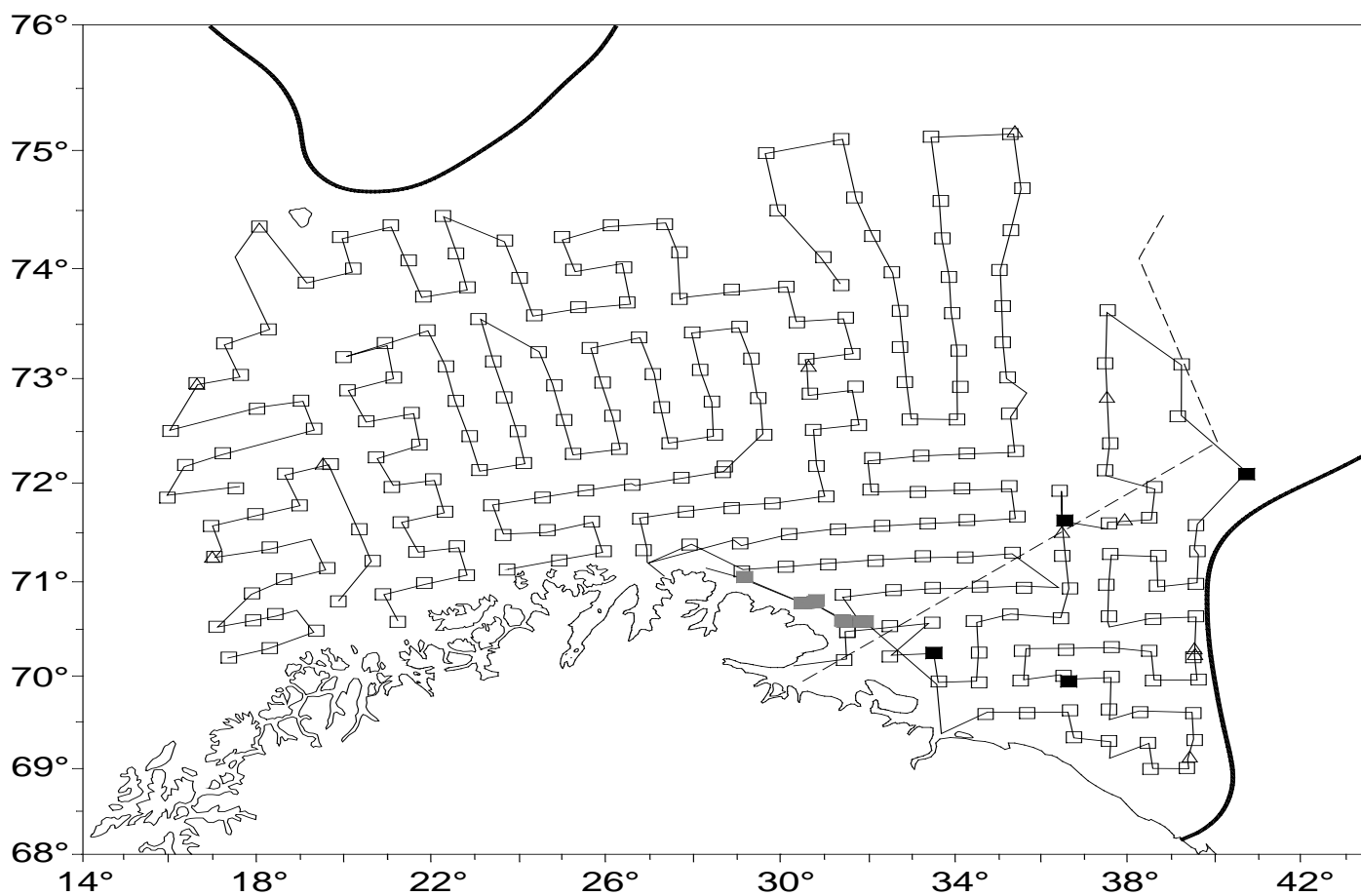


Figure 1. Survey tracks and trawl stations; R/V "G.O. Sars" 28.1-26.2 and R/V "Johan Hjort" 28.1-22.2 1999.

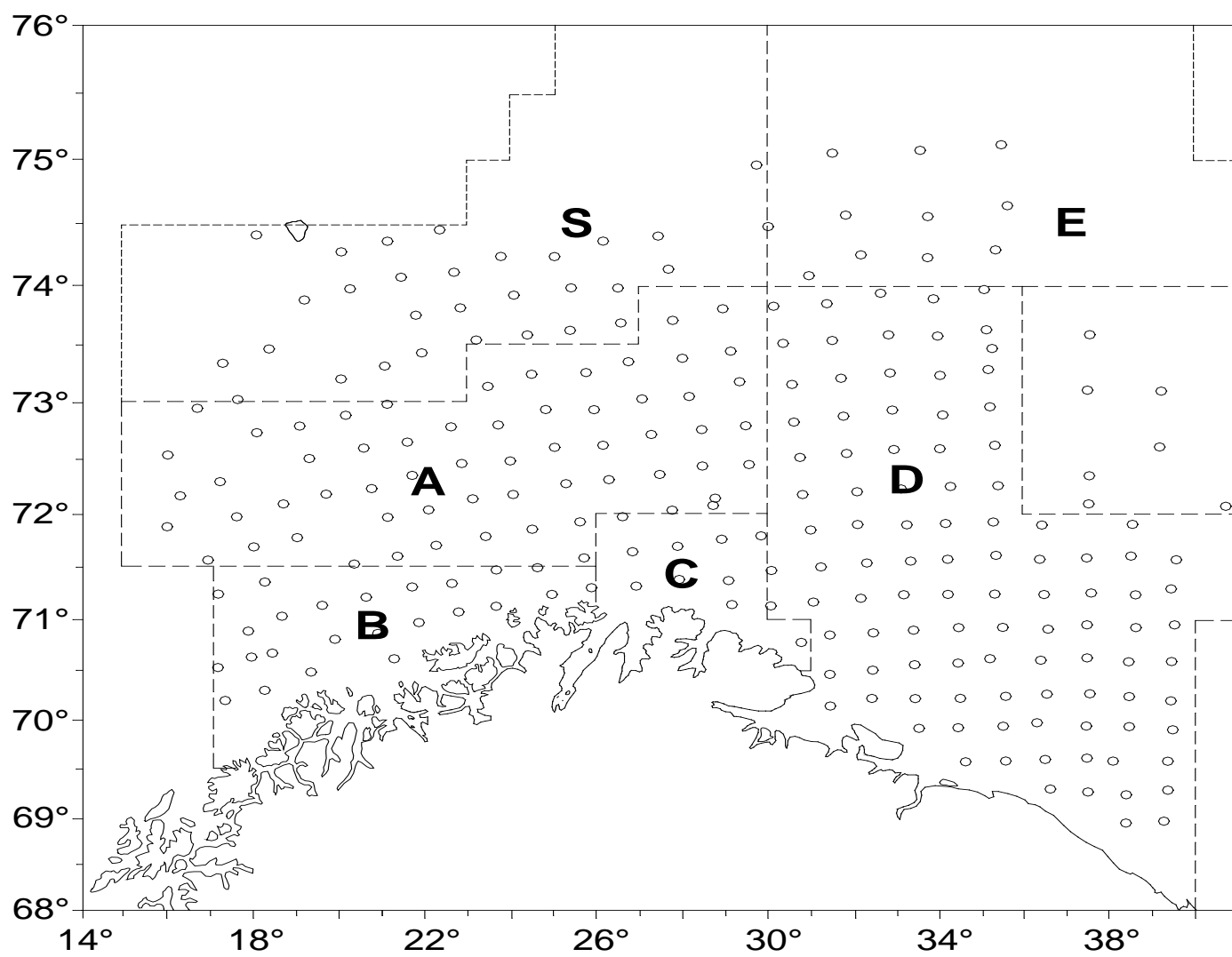


Figure 2. The survey area with main areas A, B, C and D, additional areas D', E and S and stations taken in the bottom trawl survey 28.1 - 26.2 1999.

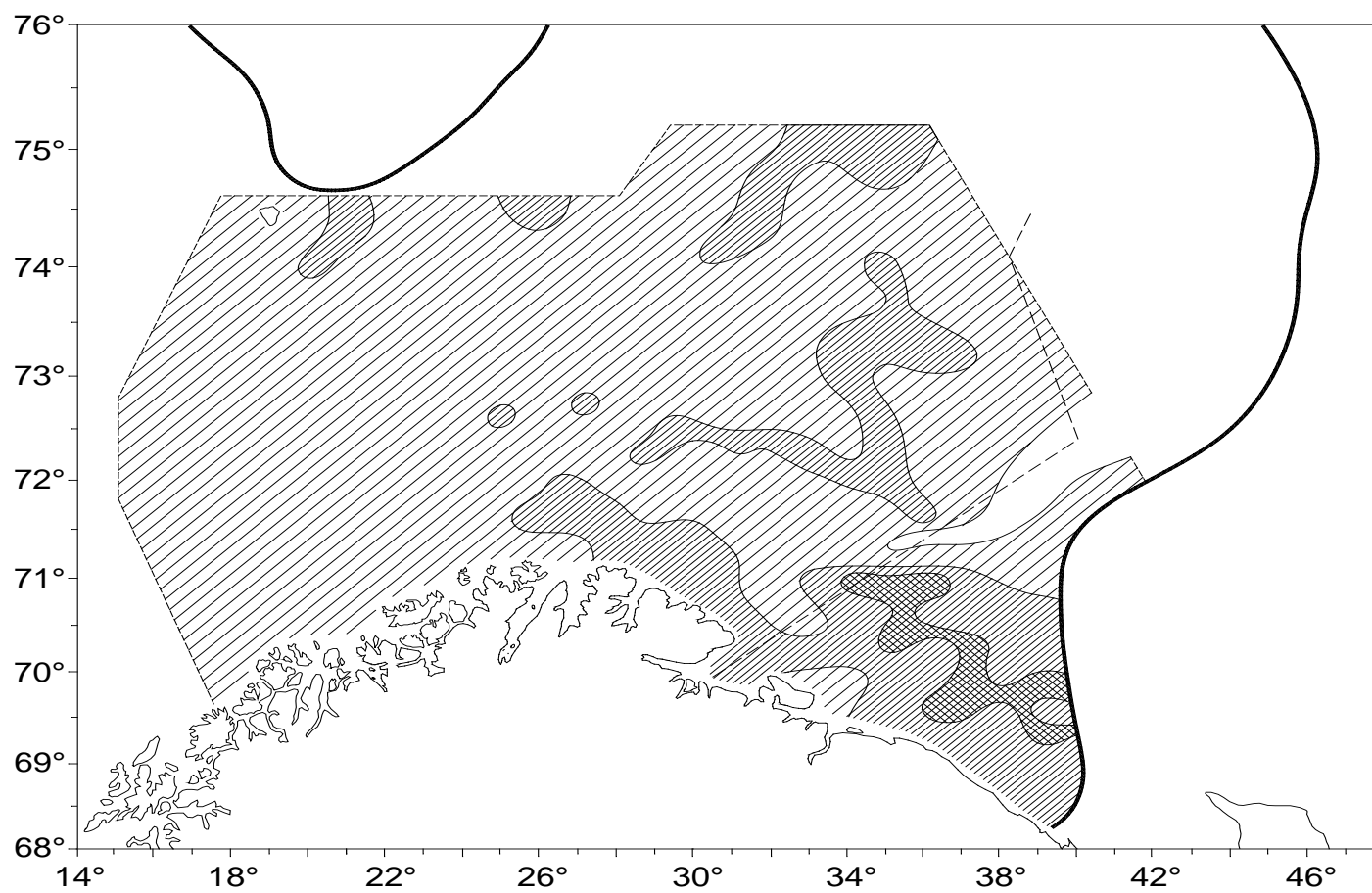


Figure 3. COD < 20 cm. Distribution in the trawl catches winter 1999(number per hour trawling).

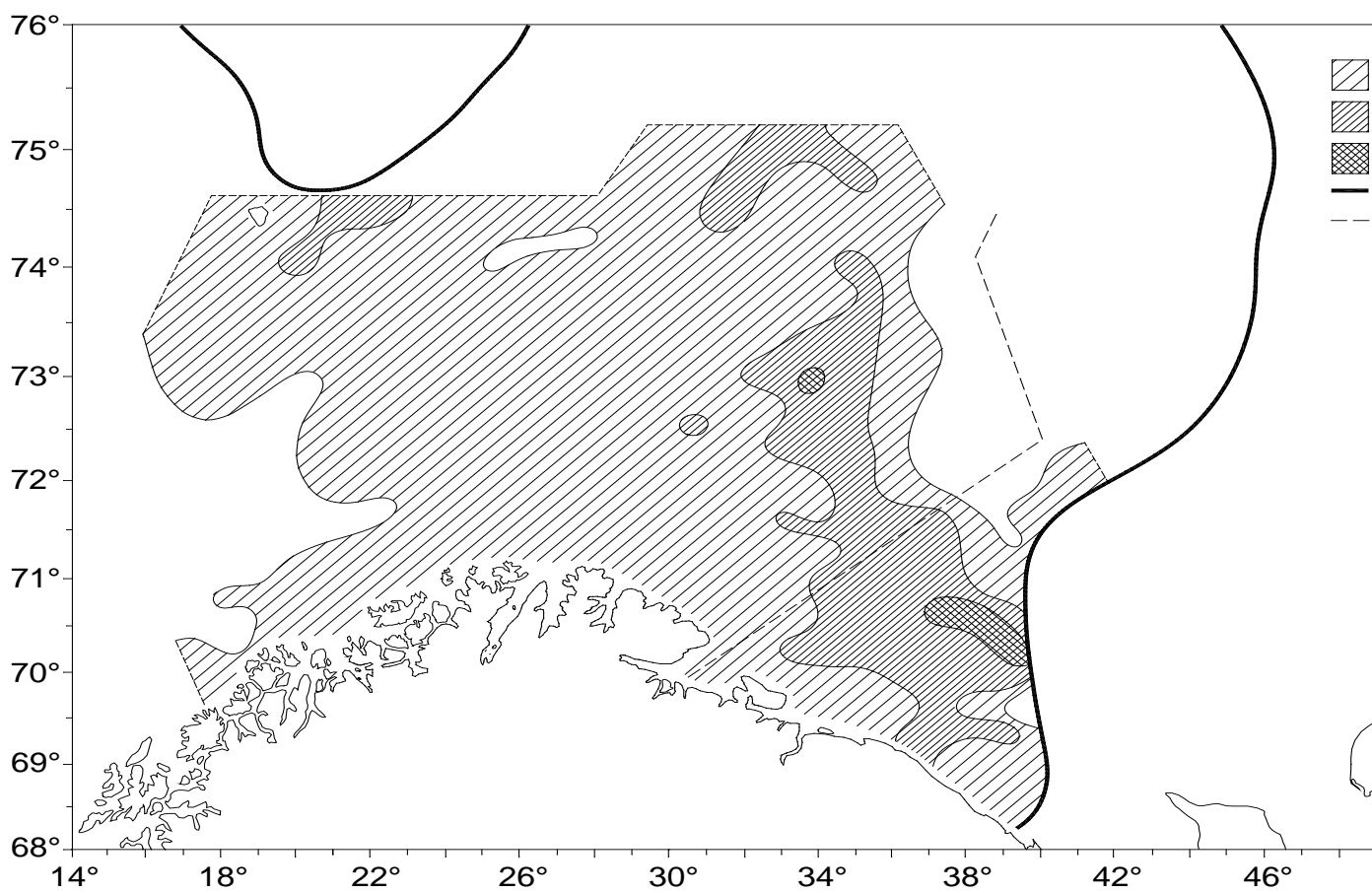


Figure 4. COD 20-34 cm. Distribution in the trawl catches winter 1999(number per hour trawling).

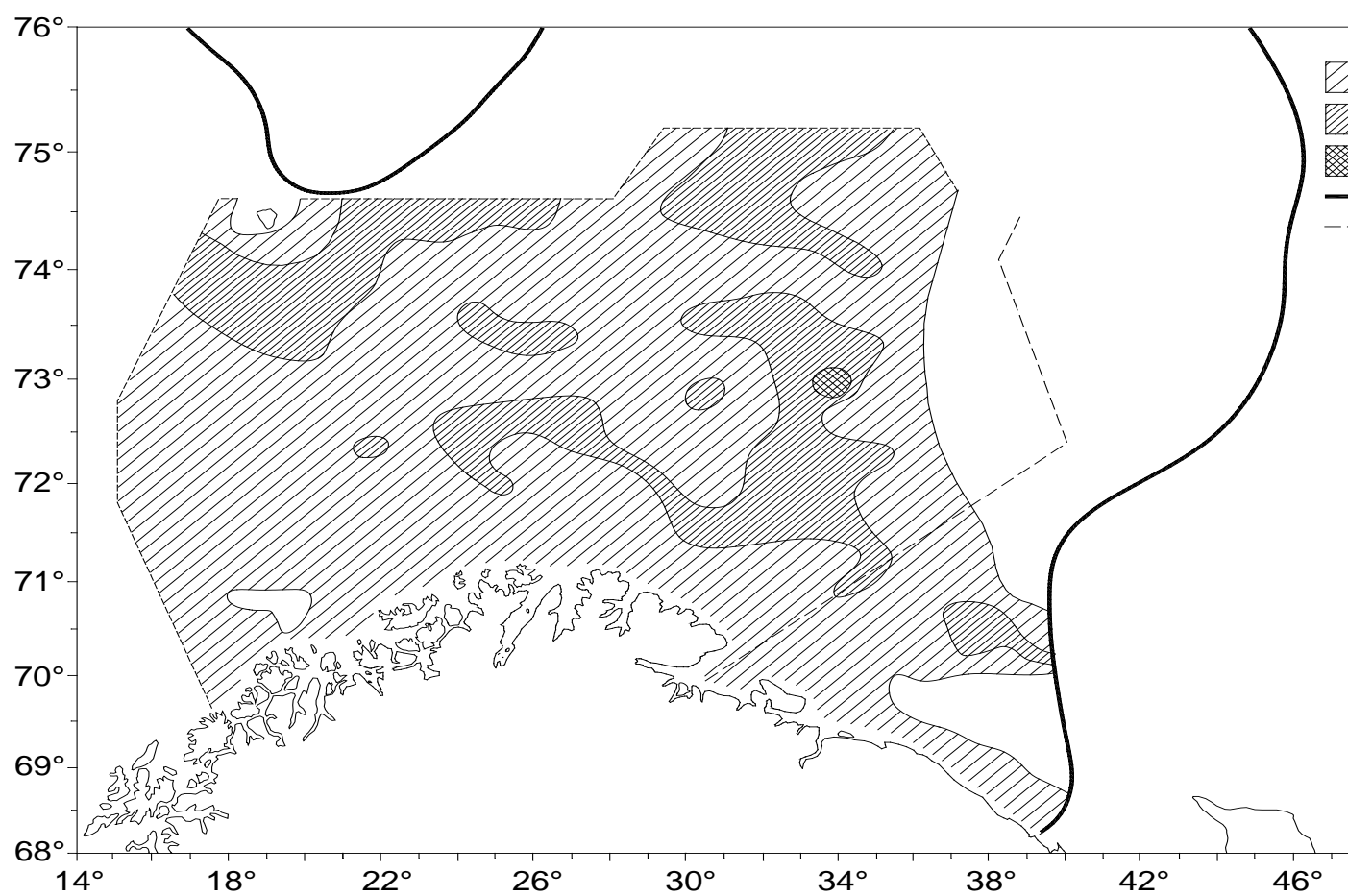


Figure 5. COD 35-49 cm. Distribution in the trawl catches winter 1999(number per hour trawling).

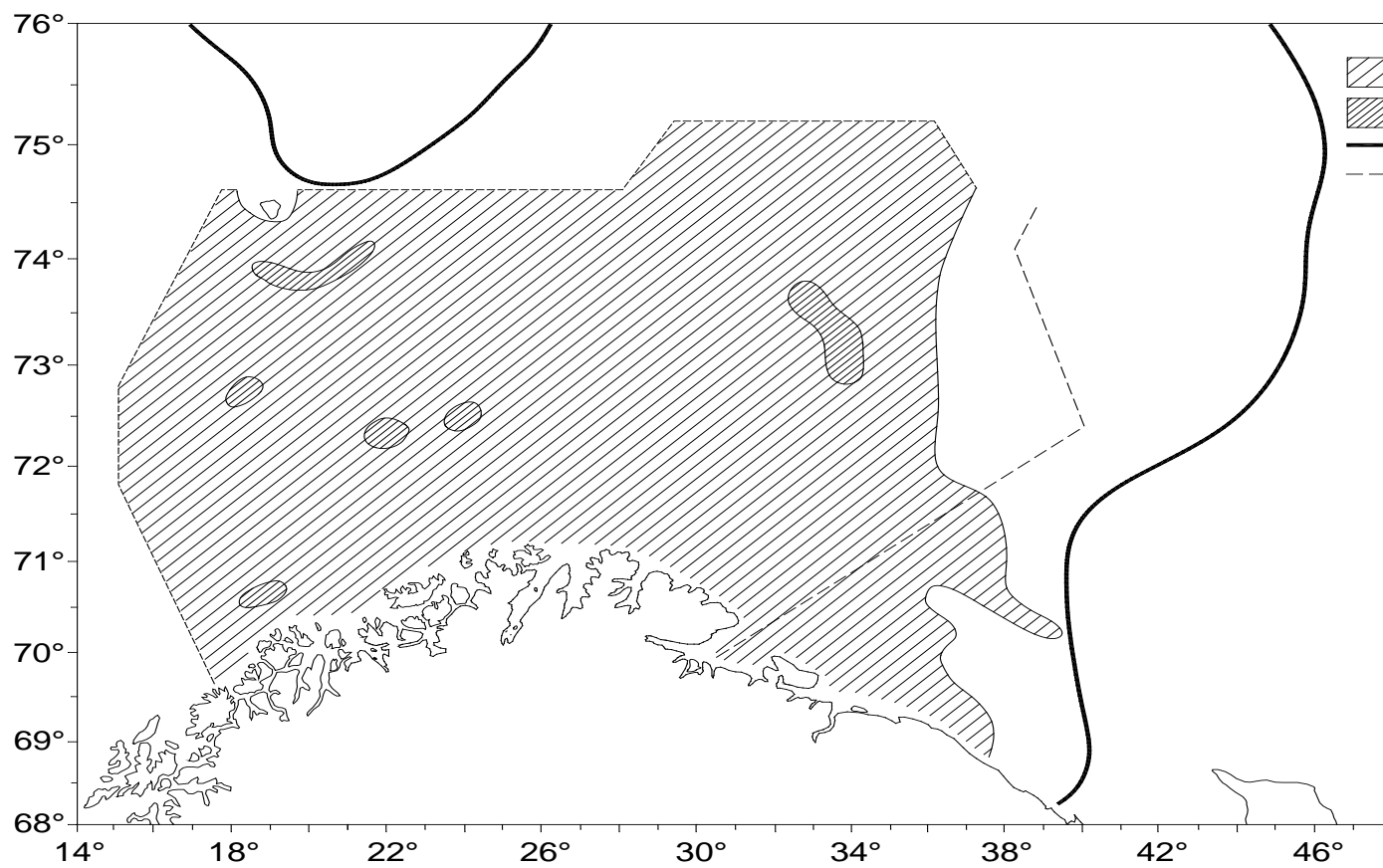


Figure 6. COD > 50 cm. Distribution in the trawl catches winter 1999(number per hour trawling).



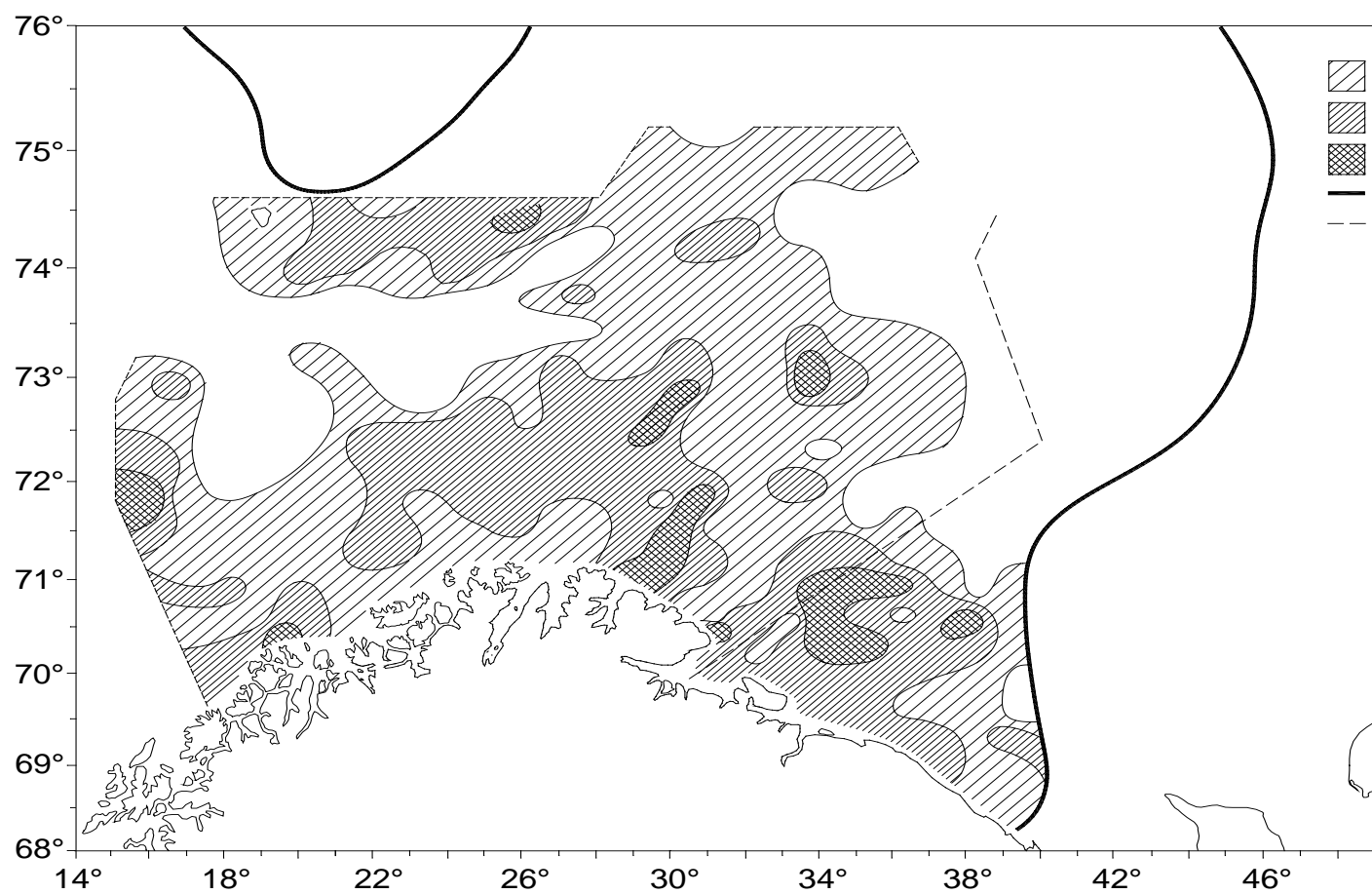
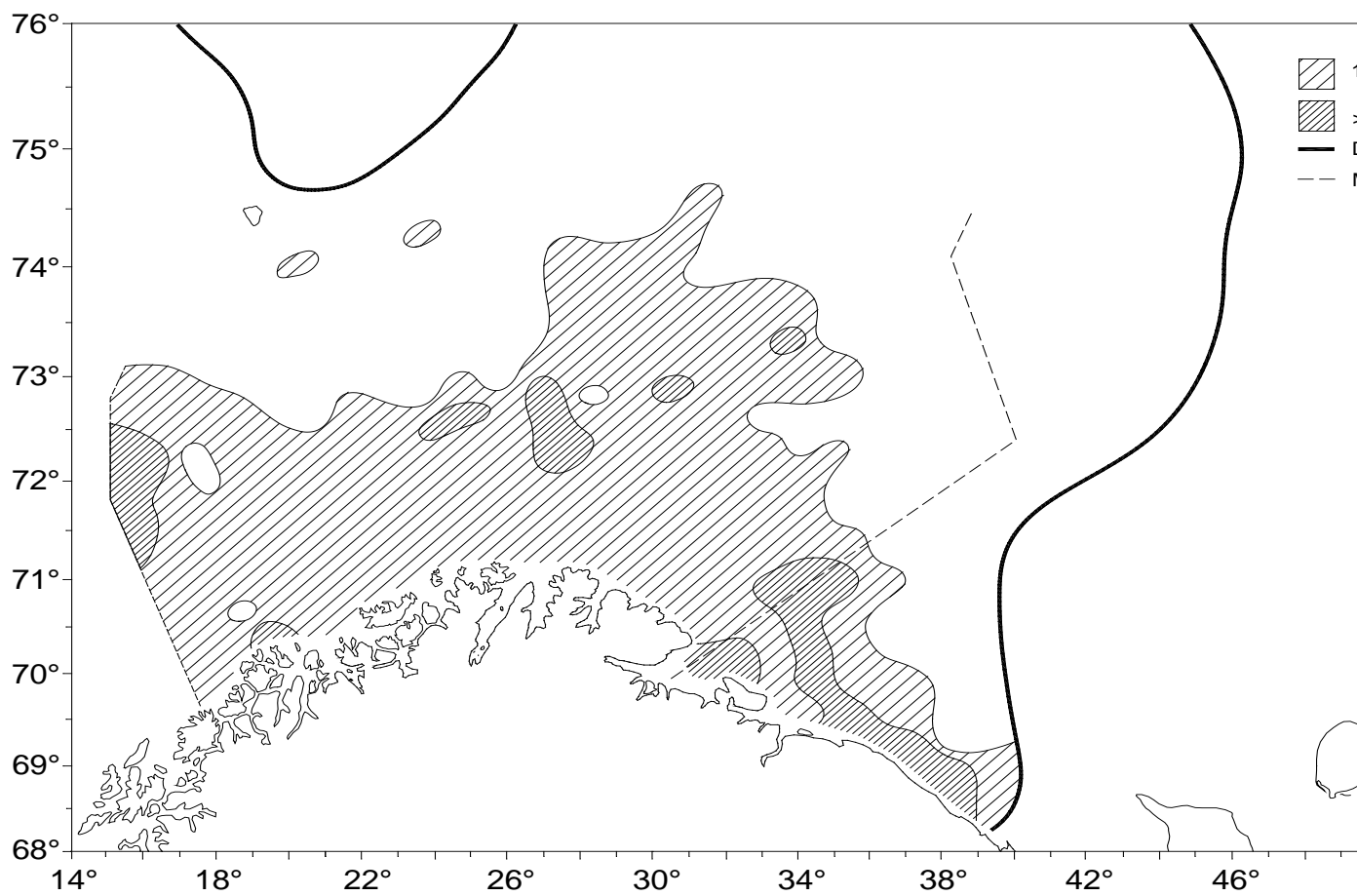


Figure 7. HADDOCK < 20 cm. Distribution in the trawl catches winter 1999 (number per hour trawling).



Figur 8. HADDOCK 20-34 cm. Distribution in the trawl catches winter 1998 (number per hour trawling).

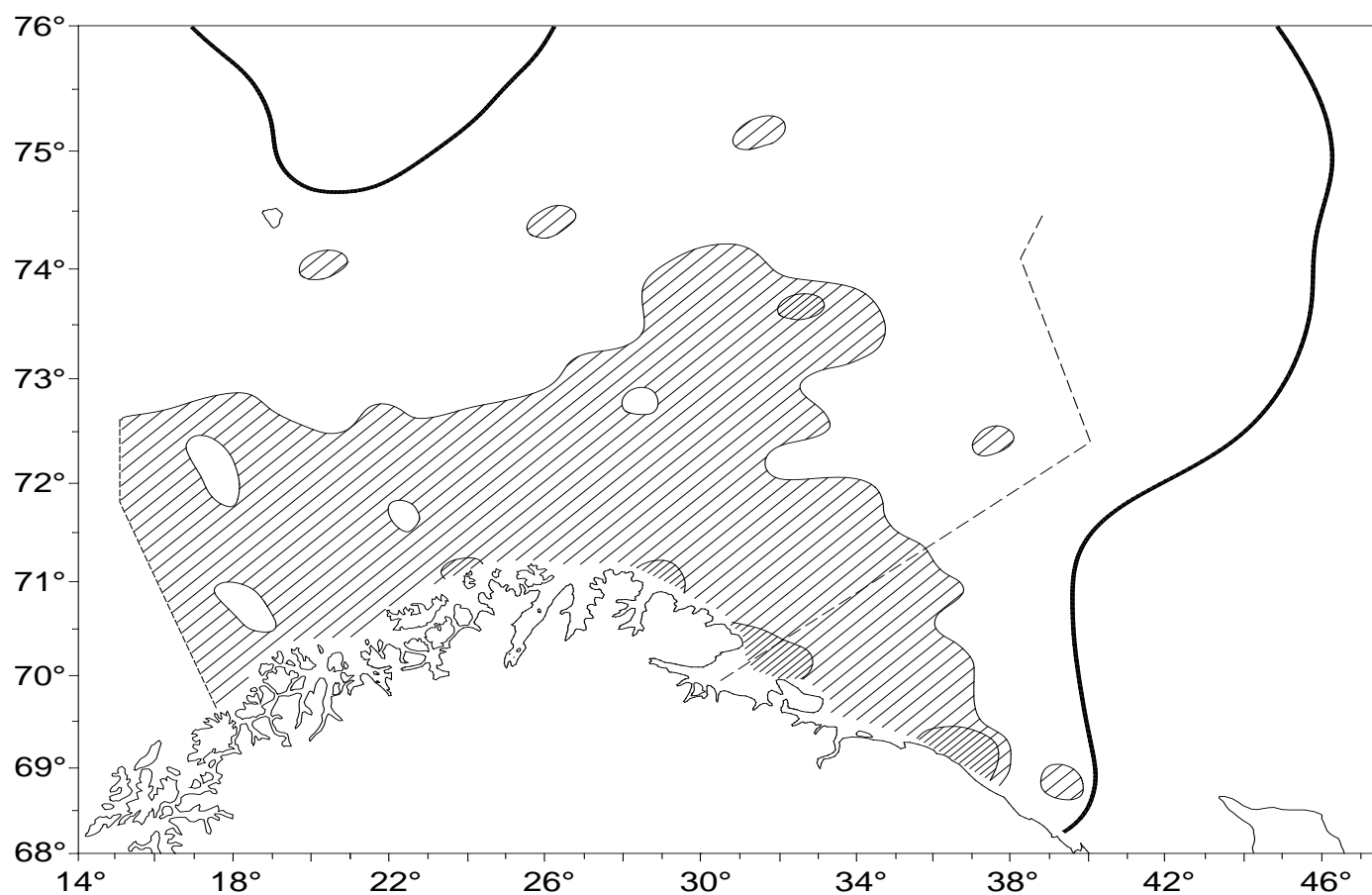


Figure 9. HADDOCK 35-49 cm. Distribution in the trawl catches winter 1999 (number per hour trawling).

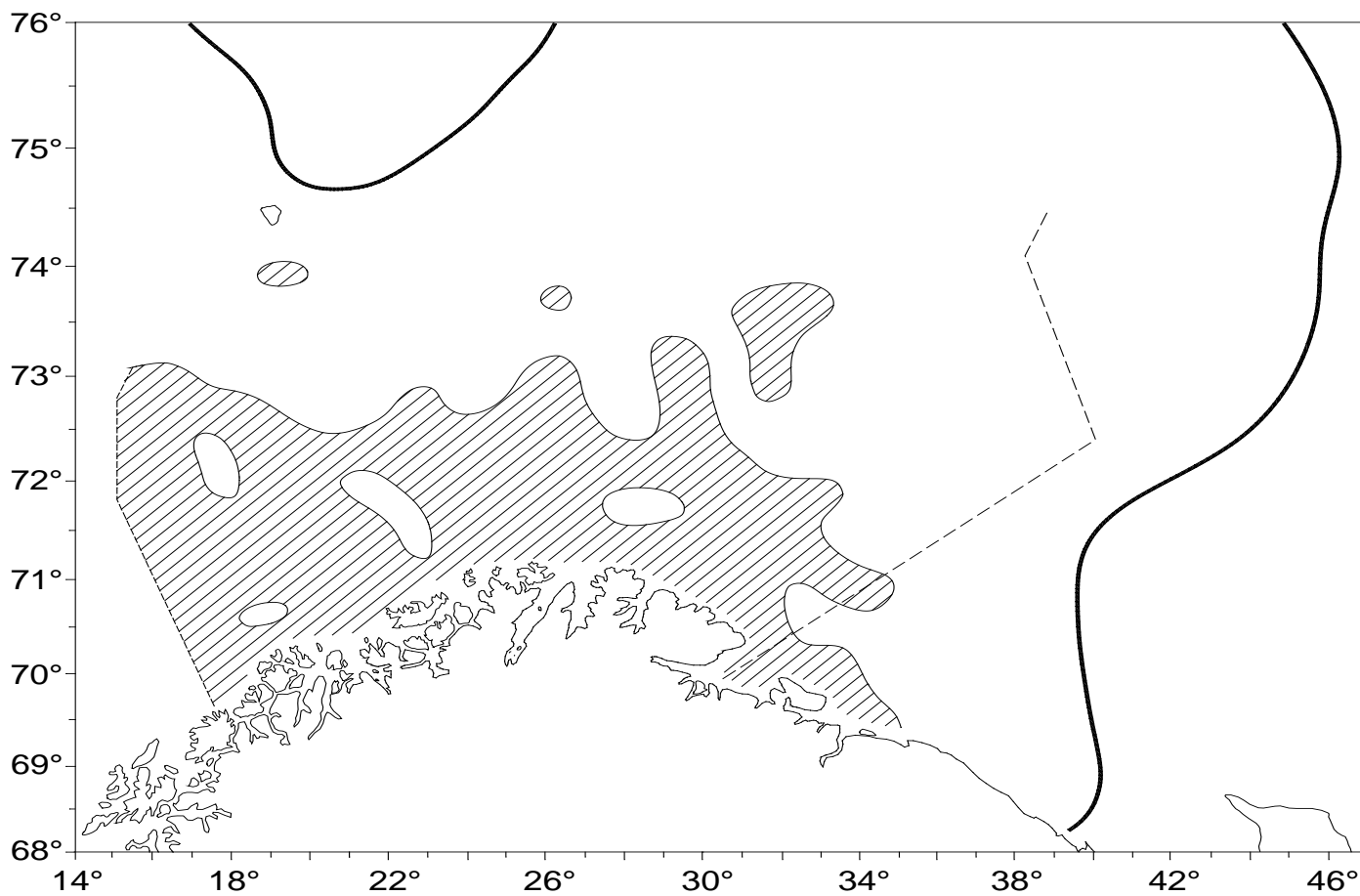


Figure 10. HADDOCK > 50 cm. Distribution in the trawl catches winter 1999 (number per hour trawling).

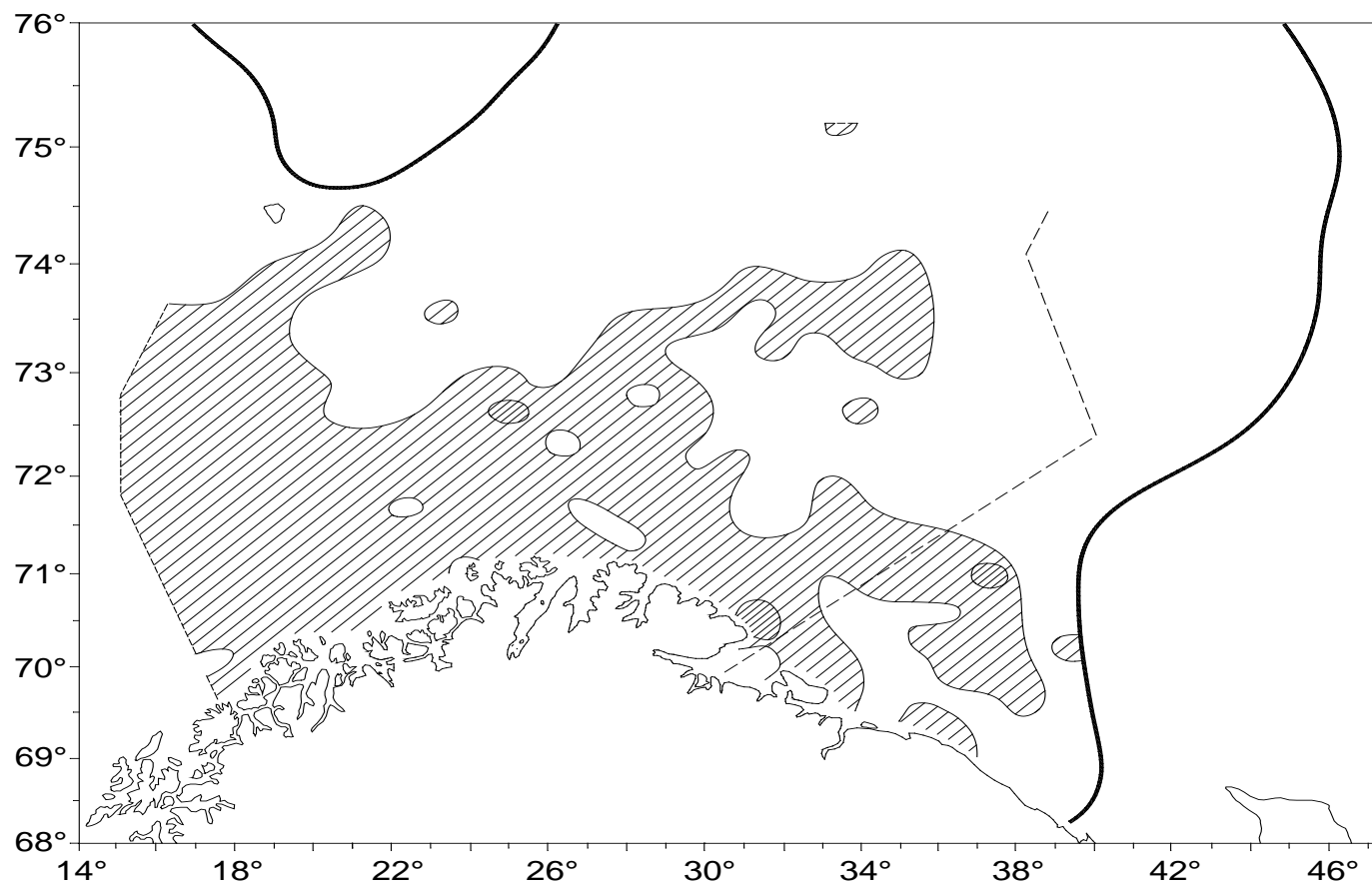


Figure 11. *SEBASTES MARINUS*. Distribution in the trawl catches winter 1999 (no. per hour trawling).

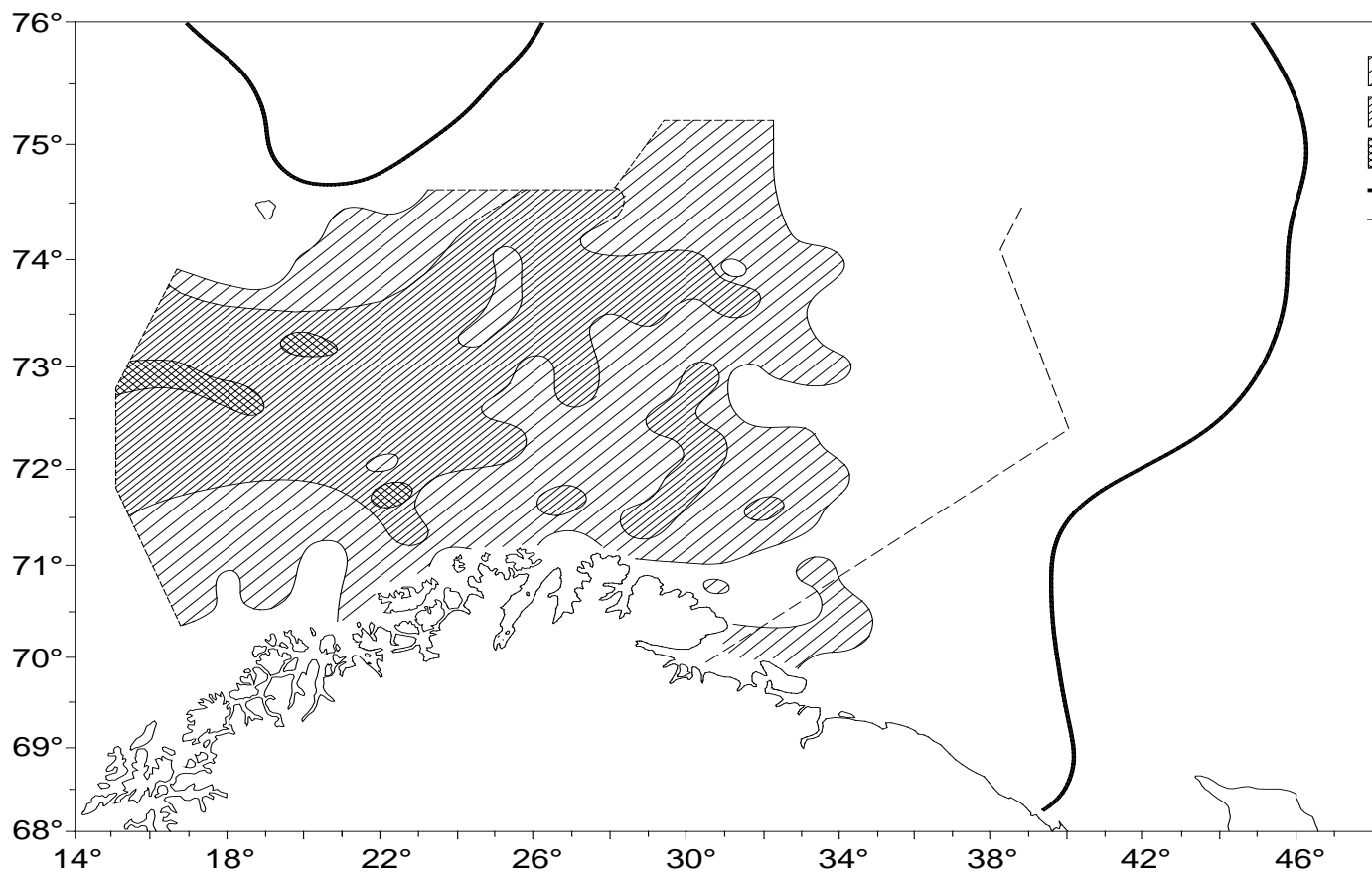


Figure 12. *SEBASTES MENTELLA*. Distribution in the trawl catches winter 1999 (no. per hour trawling).

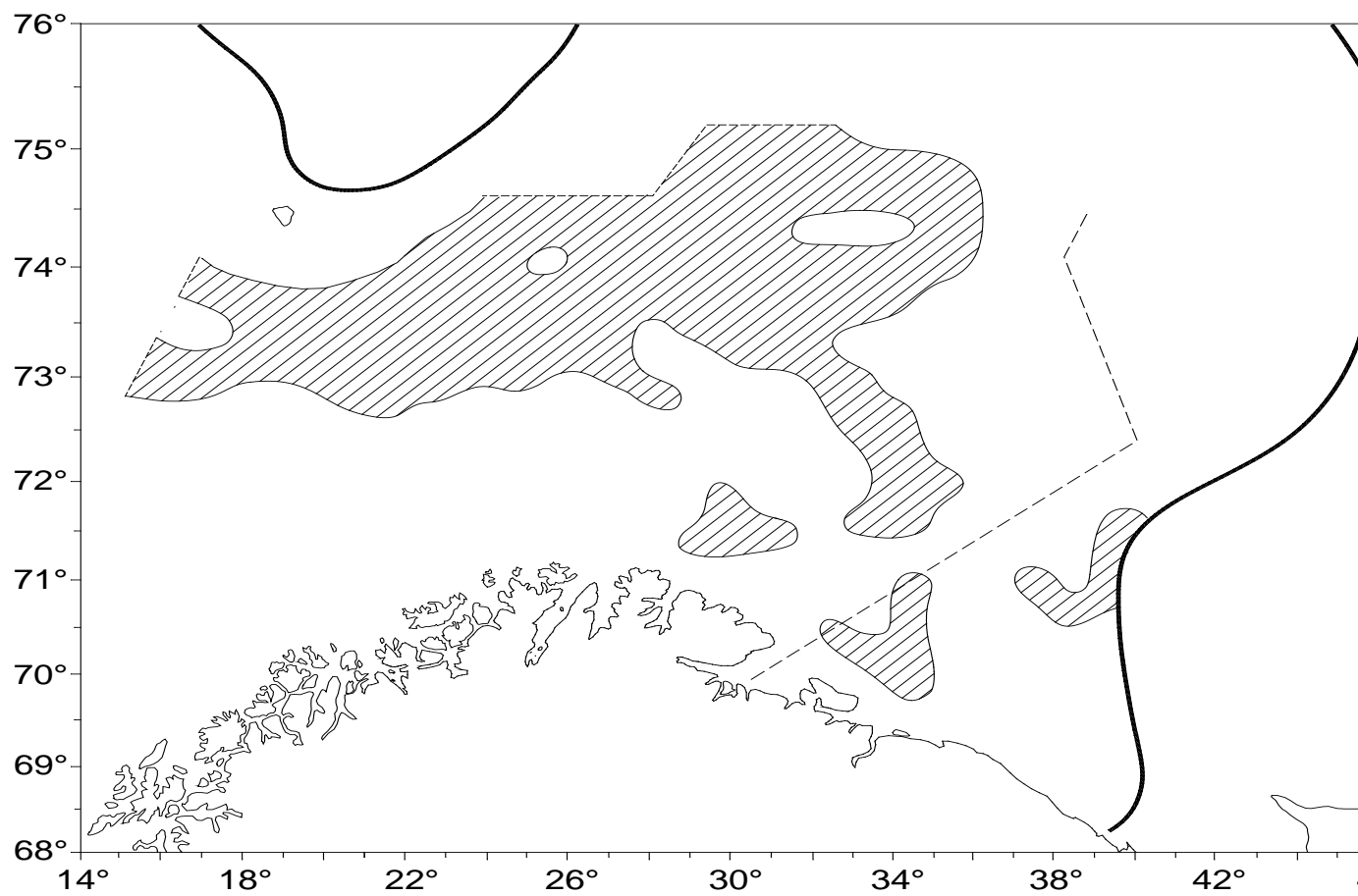


Figure 13. GREENLAND HALIBUT. Distribution in the trawl catches winter 1999 (no. per hour trawling).

